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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/721,367	11/22/2000	Gwilym Luff	MLNR-08001	6598

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EXAMINER
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NGUYEN, DUNG X

ART UNIT	PAPER NUMBER
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2631

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DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/721,367

Applicant(s)

LUFF, GWILYM

Examiner

Dung X Nguyen

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 4, 13 - 15, 17 - 20, 29, 30, 39, 40, and 43 is/are rejected.
- 7) ☒ Claim(s) 5 - 12, 16, 21 - 28, 30 - 38, and 41 - 42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4 - 8.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

2. **Claims 1, 13, 17, 29, and 39 are rejected** under 35 U.S.C. 103(a) as being unpatentable over figure 1 admitted as the prior art by applicant, and further in view of Hyatt (US patent # 5,625,583).

Regarding claim 1, figure 1 admitted as the prior art by applicant shows:

- A superhet receiver for receiving the input signal and for outputting signal (from page 1, line 15 to page 3, line 8 of the specification; from that, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement a superhet receiver from figure 1 admitted as the prior art by applicant to provide an in-phase (I) signal and one or more phase shift (Q) signals;
- Monostable 60 for receiving the input signal and outputting the output signal (page 2, lines 8 – 27 of the specification); from that, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement a superhet receiver from figure 1 admitted as the prior art by applicant to provide the multiple of monostable 60 for receiving an in-phase (I) signal and one or more phase shift (Q) signals, each monostable producing an output pulse;

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- Data filter 70 for receiving the composite waveform, recovering a modulated signal and outputting the modulated signal (from page 2, line 17 to page 3, line 5 of the specification).

Figure 1 admitted as the prior art by applicant differ from the instant claimed invention that it does not show the summing circuit coupled to each of the output pulses for combining the output pulses into a composite waveform and outputting the composite waveform.

However, Hyatt discloses the use of CCD memory for adding each of output pulses to combine output pulses into a composite signal and output the composite signal (see column 51, lines 6 – 18 and column 76, line 60 to column 77, line 30).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the figure 1 admitted as the prior art by applicant and Hyatt to fulfill the limitations of the claimed invention for improving the superhet receiver.

Regarding claim 13, the limitations are analyzed in the same manner set forth as claim 1.

Regarding claim 17, the limitations are analyzed in the same manner set forth as claim 1.

Regarding claim 29, the limitations are analyzed in the same manner set forth as claim 1.

Regarding claim 39, the limitations are analyzed in the same manner set forth as claim 1.

3. **Claims 2 - 4, 14, 15, 18, 19, 20, 30, 40, and 43 are rejected** under 35 U.S.C. 103(a) as being unpatentable over figure 1 admitted as the prior art by applicant, Hyatt (US patent # 5,625,583), and further in view of Nakamyama et al. (US patent # 6,175,746 B1).

Regarding claim 2, the figure 1 admitted as the prior art by applicant and Hyatt differ from the claimed invention that they do not state that wherein one of the phase shift signals is in

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the quadrature to the in-phase signal. However, Nakayama et al. discloses in figure 1 that Q phase shift signal 32 is in phase quadrature to the in-phase signal 31. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the figure 1 admitted as the prior art by applicant, Hyatt, and Nakamyama et al. to fulfill the limitations of the claimed invention for improving the superhet receiver.

Regarding claim 3, the figure 1 admitted as the prior art by applicant and Wynn differ from the claimed invention that they do not state that wherein the superhet receiver further comprising:

- a. An image reject mixer for converting the input signal into an in-phase IF signal and phase-shifted IF signal; and
- b. An IF filter coupled to the image reject mixer for outputting the in-phase and phase-shifted IF signals.

However, Nakayama et al. discloses in figure 1 that mixer 28 for converting the input signal to the in-phase IF signal 31 and Q phase shift IF signal 32, and IF filters 29, 30, 38 coupled to the mixer 28 for outputting the in-phase 31 and the phase-shifted 32 signals (column 3, lines 25 – 64).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the figure 1 admitted as the prior art by applicant, Hyatt, and Nakamyama et al. to fulfill the limitations of the claimed invention for improving the superhet receiver.

Regarding claim 4, the figure 1 admitted as the prior art by applicant, Hyat, and Nakayama differ from the claimed invention that they do not state that wherein the monostables are configured into monostable pairs such that the number of monosatble pair is equal to the number of output signals from the receiver.

However, figure 1 admitted as the prior art by applicant shows the monostable (block 60 of figure 1) receiving input signal and outputting the output signal (page 2, lines 8 – 27 of the

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specification). From that, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement a superhet receiver from figure 1 admitted as the prior art by applicant to provide that wherein the monostables are configured into monostable pairs such that the number of monostable pair is equal to the number of output signals from the receiver for improving the superhet receiver.

Regarding claim 14, the limitations are analyzed in the same manner set forth as claim 2.

Regarding claim 15, the limitations are analyzed in the same manner set forth as claim 3.

Regarding claim 18, the limitations are analyzed in the same manner set forth as claim 2.

Regarding claim 19, the limitations are analyzed in the same manner set forth as claim 3.

Regarding claim 20, the limitations are analyzed in the same manner set forth as claim 4.

Regarding claim 30, the limitations are analyzed in the same manner set forth as claim 3.

Regarding claim 40, the limitations are analyzed in the same manner set forth as claim 4.

Regarding claim 43, the limitations are analyzed in the same manner set forth as the combination of claims 1 and 2.

***Allowable Subject Matter***

4. **Claims 5 – 12, 16, 21 – 28, 31 – 38, and 41 – 42 are objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dress, Jr. et al. (US patent # 6,603,818 B1) discloses pulse transmission transceiver architecture for low power communications.

Patel et al. (US patent # 6,313,885 B1) discloses a DTV receiver with baseband equalization filters for QAM signal and for VSB signal, which employ common elements architecture for low power communications.

Hedstrom et al. (US patent # 5,239,273) discloses a digital demodulator using signal processor to evaluate period measurements.

Eggermont (US patent # 3,988,606) discloses a digital filter device for processing binary-coded signal samples.

***Contact Information***

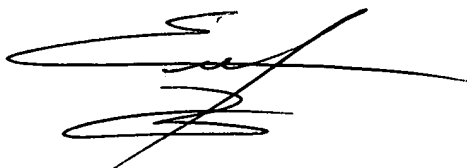
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (703) 305-4892. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (703) 306-3034. The fax phone numbers for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

DXN

March 10, 2004

A handwritten signature in black ink, appearing to be 'DXN', with a long horizontal stroke extending to the right.